



# Cyber Mission Assurance

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**M**aj Gen. Richard Webber, 24th Air Force Commander, stated recently that “Mission assurance is the number one goal in current cyber operations, versus the old paradigm of information assurance” [1].

Mission assurance requires mapping Mission Essential Functions (MEFs) onto their cyber assets to identify mission dependence on cyberspace capabilities. This mapping assumes a contested cyber environment where an adversary seeks to exploit or attack a mission through cyberspace.

## **Mission assurance follows a four-step process:**

- (1) prioritization of mission essential functions
- (2) mapping critical cyber assets
- (3) vulnerability assessment of mission essential functions
- (4) mitigation of vulnerabilities and risks

**Prioritization:** The first step is to create a detailed outline of the mission essential functions. Subject Matter Experts (SME) prioritize the MEFs according to their effect on the outcome of the mission. The outline must include the level of granularity with which this mission requires visibility into the basic cyber components. Each MEF breaks down into smaller cyber elements. However, depending on their importance in the overall mission prioritization, they may require more or less decomposition.

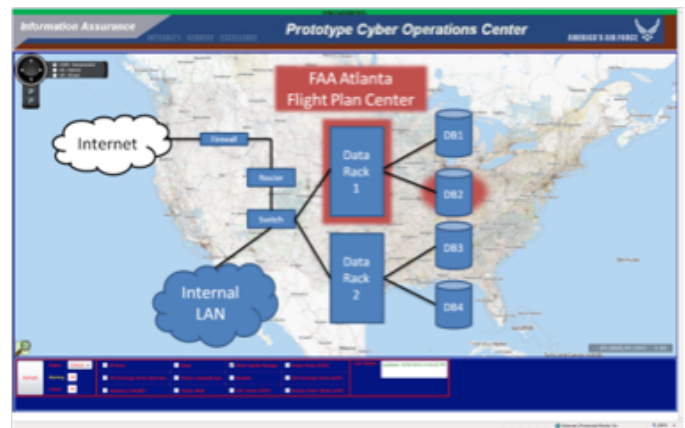
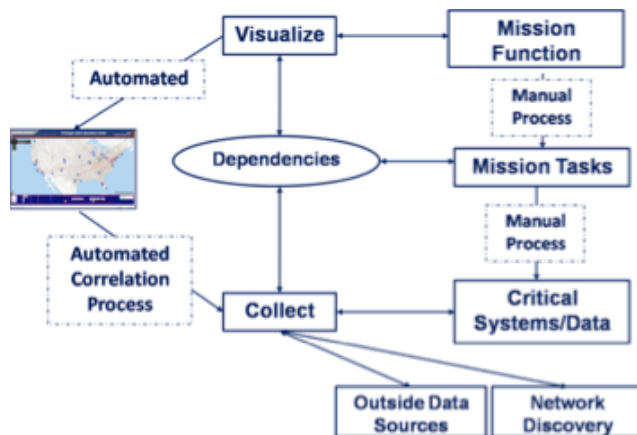
**Mission Mapping:** During this next step, a mission separates into lower level mission essential functions. The mission essential functions break down further into basic components. The cyber components includes USAF owned assets, DoD owned assets and commercial assets used during the mission. The SMEs narrow the focus to those assets that are most critical for the success of the mission. Essential to understanding and striving toward mission assurance is defining the connection between cyber components in relation to the mission.

**Vulnerability Assessment:** Throughout the stages of the mission, cyber assets have varying impact on the overall measure of mission assurance. The impact ranges from no effect, mission degradation requiring fight through capabilities, to mission failure. A formal examination of the cyber assets previously mapped out allow for a complete vulnerability assessment.

(OVER)



**Mitigation:** After identification of the potential vulnerabilities, current research, TTPs and mitigation strategies reduce the exposure of the mission. The challenges not solved pave the way for future research and breakthroughs.



## References

[1] Millette, Christine. "Space Command Inspector General: 24th Air Force ready for full operations" Internet <http://www.afspc.af.mil/news/story.asp?id=123221640>